

AMSAT News Service Weekly Bulletins

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AMSAT NEWS SERVICE

ANS-356

ANS is a free, weekly, news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

Please send any amateur satellite news or reports to:
ans-editor@amsat.org

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SB SAT @ AMSAT \$ANS-356.01

AMSAT President's Letter

AMSAT News Service Bulletin 356.01

>From AMSAT HQ SILVER SPRING, MD.

December 21, 2008

To All RADIO AMATEURS

BID: \$ANS-356.01

Happy Holidays! Best wishes to everyone during this festive time of the year. As I write this, a major snowstorm is providing plenty of 'white stuff' in the Midwest and New England, so I presume this means that we will have a white Christmas here in Massachusetts. While this is certainly a time of economic uncertainty, I also know that our members continue to make a difference for AMSAT.

A number of interesting opportunities and events have developed over the past two months for AMSAT that I would like to briefly share with you:

1. ARISS Silver Anniversary. The first amateur radio two-way communication between the Space Shuttle and amateurs on the ground took place on December 3, 1983 when Owen Garriott, W5LFL made his historic flight on STS-9. There are a number of opportunities for amateurs to help celebrate this event and the ARISS International Committee, chaired by AMSAT VP-Human Space Flight, Frank Bauer, KA3HDO have arranged for some special events. Please check ANS and the AMSAT webpage (www.amsat.org) for the latest information and join the fun!
2. A0-16 operations. As expected, performance of this spacecraft is declining as the spacecraft's temperature is dropping due to longer eclipses resulting in less sunlight and a cooler spacecraft. This drop in temperature is causing the satellite's hardware timer

to reset until the spacecraft warms up (when there is at least 85% illumination). If you're interested in making two-way contacts using AO-16's unique cross mode, cross band voice repeater, with an uplink on 145.920 FM and downlink on 437.026 MHz reduced carrier AM, now is the time to try it! The satellite is expected to 'go silent' shortly when temperatures stay low enough as to not allow software configuration of the satellite before the hardware timer resets itself again.

3. President's Club. A fundraising appeal letter was mailed this week to all AMSAT members. Please consider donating to the AMSAT President's Club so that we can continue our efforts to maintain amateur radio in space.

4. Near Term Engineering Task Force. I announced at the AMSAT Annual Meeting in Atlanta that a group led by Bill Ress, N6GHZ had been formed to review the 'Rideshare' Proposal developed by Tom Clark, K3IO as well as evaluate AMSAT's ability to develop a modularization strategy to adapt RF packages to various structures. The committee has been diligently meeting every two weeks via teleconference to discuss future options for AMSAT and to help structure AMSAT's thinking on future spacecraft opportunities. While it is too soon for formal announcements of their findings, it is good to know that we have a formal group actively focused on engineering issues.

5. SuitSat-2. Development work continues to place SuitSat-2 in service sometime in 2009. Several engineering issues have recently surfaced regarding modulation and transmission schemes and the team is evaluating several options regarding how best to resolve the issues. Several individuals have recently joined the engineering team to help overcome these challenges by developing potential alternative solutions.

6. ITAR. I announced at the AMSAT Annual Meeting in Atlanta that AMSAT would actively develop a strategy concerning ITAR (International Traffic in Arms Regulations) and related export regulations. Our goal is to ensure that AMSAT is in full compliance with ITAR, develop materials to train our satellite builders on ITAR compliance, and to seek ways where we may continue to work with other AMSAT organizations on satellite projects. Since the Annual Meeting, Bill Ress, N6GHZ and I have been working with an attorney who specializes in ITAR. We hope to make a formal submission to the State Department regarding ITAR in early 2009.

7. AMSAT Lab. AMSAT is actively seeking a new home for our AMSAT Lab. Unfortunately, due to changes that took place at HISS (Hawk Institute for Space Sciences) in Pocomoke City, MD over the summer, we are forced to remove our equipment and clean room from the current facility. We are in active discussions with several institutions concerning potential relocation, but no decision has been made. If you are in position to provide contacts with a not-for-profit institution that might be interested the hosting the AMSAT Lab, please contact me.

8. AMSAT 40th Anniversary. AMSAT was incorporated in 1969, so this coming year (2009) is our 40th Anniversary! The 2009 AMSAT Symposium will take place the weekend of October 9 in the Washington-Baltimore area. Look for details in the upcoming AMSAT Journal. Please join us that weekend as we celebrate a significant milestone for AMSAT and build the foundation for the next 40 years of AMSAT.

As you can see, there are a number of activities that are ongoing within AMSAT. While we are challenged by the impact of current events, we continue to move forward in a number of areas.

As always, I appreciate hearing from the AMSAT membership. Should you

have any questions or concerns about AMSAT, please don't hesitate to contact me. I will make every effort to respond to e-mails that I receive, but please keep in mind that I travel extensively which may limit my ability to respond quickly. Please know that I read every e-mail that I receive from AMSAT members and that I appreciate every person's willingness and time spent to share their thoughts and suggestions.

Seasons Greetings,

Barry Baines, WD4ASW
President-AMSAT

[ANS thanks Barry, WD4ASW for the above information]

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SB SAT @ AMSAT \$ANS-356.02
ARISS 25th Anniversary Adds New Modes

AMSAT News Service Bulletin 356.02
>From AMSAT HQ SILVER SPRING, MD.
December 21, 2008
To All RADIO AMATEURS
BID: \$ANS-356.02

ARISS International Chairman and AMSAT-NA V.P. for Human Spaceflight Programs Frank Bauer, KA3HDO invites amateur radio operators around the world to join in the ARISS team's 25th anniversary of amateur radio operations from space. Increased activity and new exciting modes of operation from the ARISS amateur radio station aboard the International Space Station are featured in this celebration operating period.

To date, the ISS crew has configured the radio to support cross-band repeater operations, they have supported some SSTV downlinks and we have had the opportunity to participate in a special test of 9600 baud packet radio operations on the simplex frequency of 145.825 MHz. This past week featured 1200 baud packet operations on 145.825 MHz to open a dual-hop APRS path in case PCSAT-1 became operational.

For the upcoming weeks the following is being planned in the near-term:

- + December 21-26 - we plan to support the Crossband repeater mode with a twist. Our intent is to configure the radio for 145.99 MHz uplink including PL tone of 67.0 and 437.80 MHz down. This will be performed in low power mode.
- + December 22 - Expedition 18 Commander Mike Fincke and Flight Engineer Yuri Lonchakov plan to perform a spacewalk. As per standard procedure, the ISS ham radio system will be turned off for the EVA.
- + December 28-January 3 - we plan to reconfigure the Crossband repeater for a special experiment. This will be a test of our L-Band uplink capability, which, to date, has not been proven out. Plan for an uplink of 1269.65 MHz and downlink on the standard frequency 145.80 MHz using low power. Given the substantial cable losses of the L-band system, we hope some "big guns" are able to penetrate through, keep up with doppler, and make the connection.
- + And at times, especially during the weekends, you might see some

SSTV operations if the crew is available.

The ARISS team will provide more updates in the near future. They would like to remind everyone that ISS flight requirements related to EVA and vehicle activity may require the radio to be off for some portion of this schedule. And school contacts and general QSO opportunities by the crew will also preempt this schedule for short periods of time. (But remember that if you hear these, you still qualify for a commemorative certificate).

Details of how to receive your ARISS 25th Anniversary Commemorative Certificate can be found at <http://www.amsat.org>.

[ANS thanks Frank, KA3HDO for the above information]

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SB SAT @ AMSAT \$ANS-356.03
ARISS Discusses L-Band Operating Parameters

AMSAT News Service Bulletin 356.03
>From AMSAT HQ SILVER SPRING, MD.
December 21, 2008
To All RADIO AMATEURS
BID: \$ANS-356.03

ARISS US Hardware Manager Lou McFadin, W5DID provided a summary of expected parameters for those considering trying to make a contact with the ISS on L-band to VHF crossband repeater experiment planned for December 28 to January 3.

Lou reported, "The measured sensitivity of the L band receiver on a D700, as the radio aboard the ISS, is -105dBm for full quieting. The cable loss from the radio to the antenna is 9.3db. The antenna gain is zero db. The polarization is LHCP."

Extending the calculations to cover the entire system path, Lou said, "The path loss at the horizon on L band is -160dB. That means the required EIRP for a full quieting contact at the horizon is 65dBm. The path loss decreases by 15dB at 80 degrees elevation so that means you can get full quieting with 50dBm in that case. To further elaborate if you use a 20dB gain antenna (a small dish), it is estimated that you can complete a QSO with 32 watts at the horizon or 1 watt at 80 degrees elevation."

The planned operating frequencies include:
Uplink: 1269.650 MHz FM
Downlink: 145.800 MHz FM

[ANS thanks Lou, W5DID for the above information]

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SB SAT @ AMSAT \$ANS-356.04
Tracking QRM - AO-51 Repeater Pairs Return to Normal Configuration

AMSAT News Service Bulletin 356.04
>From AMSAT HQ SILVER SPRING, MD.
December 21, 2008
To All RADIO AMATEURS
BID: \$ANS-356.04

AMSAT-NA VP Operations, Drew K04MA reported on behalf of the A0-51 Operations Team, "We are now back to the normal uplink arrangement of 145.920 and 435.300 for normal repeater use. We changed from the QRM mitigation experiment of operating via the 145.880 uplink back to this normal mode to enable low-power repeater QRP operation. The QRP repeater is now operational on 145.880 and 435.150."

As a result of the QRM investigation Drew said, "I'm convinced not all of our problems are related to the cordless phones. I heard tonight whistlers, blowing in the mike, and folks giving extended CQs. We are working on finding the general location of the cordless phones, but it takes time. Then we'll work at shutting them down."

The A0-51 Operations Team provided results of their QRM investigation on and around the 145.920 uplink. There may be some low level modulation on some of the signals in the captured waterfall diagram. It is believed they may be from some of the same long distance phones that were plaguing A0-27 and S0-50 a few years ago. Observations indicate the interfering signals are lost about the time the edge of the footprint crosses the mid Atlantic states. Refer to this page:
<http://il39.photobucket.com/albums/q305/glasbrenner/F0-29QRM-1.jpg>

[ANS thanks Drew, K04MA for the above information]

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SB SAT @ AMSAT \$ANS-356.05
PCSAT-1 Recovery Partial Success

AMSAT News Service Bulletin 356.05
>From AMSAT HQ SILVER SPRING, MD.
December 21, 2008
To All RADIO AMATEURS
BID: \$ANS-356.05

Bob, WB4APR provided an update on PCSAT-1 recovery status from the U.S. Naval Academy Satellite Laboratory. Bob wrote, "For the first time in 7 years, we were not able to fully recover PCSAT during this full sun period despite the efforts of a number of dedicated volunteers around the world."

PCSAT-1 is only operation when its solar panels are illuminated by sunlight. Full sun periods occur when passes are at sunrise and sunset to earth observers. PCSAT gets sun 24 hours a day then, but only on the side panels due to the orientation of the satellite. Ground station controllers were able to recover PCSAT-1 and the weak solar illumination allowed operation for generally an orbit before the power budget could not support the load.

Bob summarized, "Anyway, this is not the last you will hear of PCSAT, but there will probably not be any more several week full sun, full recovery periods as there have been in the past. I really appreciate all the efforts of so many operators. So play packet on the ISS and thanks again for all your efforts!"

[ANS thanks Bob, WB4APR for the above information]

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SB SAT @ AMSAT \$ANS-356.06
Satellite Shorts From All Over

AMSAT News Service Bulletin 356.06

>From AMSAT HQ SILVER SPRING, MD.

December 21, 2008

To All RADIO AMATEURS

BID: \$ANS-356.06

- + The EME DXpedition to Namibia between January 7-16, 2009 plans to include satellite operation via A0-7, F0-29 and A0-51. Their main goal is to activate Namibia on 50, 144, 432 and 1296 MHz EME. The operators will be ZS6WB Hal, ZS6OB Pine, ZS6BUG Dick, ZS6AC Sarel, N7BHC Dave, HB9CRQ Dan. Read more at: <http://hb9q.ch/joomla/index.php>
- + John K8YSE says all of the requests for QSL cards for contacts with K8YSE/7 in DM31, Organ Pipe Cactus National Monument, 18-19 November and DM51, 22 November, Bisbee, Arizona have been put in the mail.
- + Nader,ST2NH reported an interesting A0-51 QSO with Sarel, S79AC from the Seychelles Islands. Sarel was using an FT-817 and an Arrow antenna.
- + Please note that the address for ARISS-Europe QSL requests has been updated. The correct address is: F1M0J - Mr CANDEBAT Christophe, ARISS-Europe QSL Manager, 25th Anniversary Certificate, 19 Chemin des Escumeilles, 66820 VERNET les Bains, FRANCE.
- + Jim, ND9M/VQ9JC is operating on a merchant marine ship from the Persian Gulf to Diego Garcia. His gear includes a Kenwood TH-6FA and Arrow-2 to operate on A0-51 and S0-50. He plans to be in Diego Garcia grid (MI62) until April, 2009.
- + Some of the presentations from Ansoft's Inspiring Engineering workshops covering radio frequency engineering from HF to microwave, EMI, and power systems are available on-line at:
<http://www.ansoft.com/ie/index.cfm?src=iemailp>
- + AMSAT President Barry Baines' report on the State of AMSAT given at the 2008 AMSAT Symposium in Atlanta is available on-line at:
http://www.amsat.org/amsat-new/pdfs/2008_Annual_Meeting/2008-10-25_WD4ASW_Annual_Meeting.pdf
- + A video of the September 13, Prairielands Council Scouts ARISS contact has been posted on-line at: <http://www.youtube.com/watch?v=MsL40kZb9CQ>
- + Congratulations to Terry G1WPR on his 4000th contact via A0-7.
(thanks K3SZH)

[ANS thanks everyone for the above information]

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SB SAT @ AMSAT \$ANS-356.07

Mark Your Calendars - 2009 AMSAT Symposium October 9-10

AMSAT News Service Bulletin 356.07

>From AMSAT HQ SILVER SPRING, MD.

December 21, 2008

To All RADIO AMATEURS

BID: \$ANS-356.07

The 2009 AMSAT Space Symposium and Annual Meeting will be held on October 9th and 10th. On the 11th and 12th, there will be an ARISS meeting open to the membership. The meetings will be held at the Sheraton Four Points at BWI Airport. 2009 will be the 40th Anni-

versary of AMSAT. We hope many of you will be able to come and help us celebrate.

AMSAT is also planning a number of activities and displays highlighting our 40th Anniversary at Dayton this year. The 2009 Dayton Hamvention will be 15-17 May 2009, so mark your calendars and plan on visiting the AMSAT booth and relive 40 years of keeping amateur satellites in space.

[ANS thanks Gould, WA4SXM and the 2009 Symposium Committee for the above information]

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SB SAT @ AMSAT \$ANS-356.08
Reminder: SKN on OSCAR 2009

AMSAT News Service Bulletin 356.08
>From AMSAT HQ SILVER SPRING, MD.
December 21, 2008
To All RADIO AMATEURS
BID: \$ANS-356.08

Ray Soifer, W2RS extends the annual cordial invitation to all radio amateurs worldwide to participate in AMSAT's Straight Key Night (SKN) on OSCAR 2009.

Participating in SKN on OSCAR 2009 is easy. No rules, no scoring and no need to send in a log. Just operate CW through any OSCAR between 0000 and 2400 UTC on 1 January 2009, using a straight hand key.

In keeping with the friendly nature of this event, all participants are encouraged to nominate someone they worked for "Best Fist." Your nominee need not have the best fist of those you heard, just of those you worked. Please send your nomination to w2rs@amsat.org. A list of those nominated will appear in ANS and The AMSAT Journal.
CU SKN!

[ANS thanks Ray Soifer, W2RS for the above information]

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In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive additional benefits. Application forms are available from the AMSAT Office. With that do recall that the roundest knight at King Arthur's Round Table was Sir Cumference. He acquired his size from too much pi.

73,
This week's ANS Editor,
JoAnne Maenpaa, K9JKM